Subject index

Anabaena, 9, 52, 53
Animal poisonings, 1
Ankyra, 9
Aphanizomenon, 65, 66, 67, 69, 72
Arrhenius, 13
Asterionella sp., 6, 8, 10
Avogadro's Number, 12

Baltic Sea, 65–67, 69–70, 77
Buoyancy change
  calculations, 90, 92, 103, 114
  modelling, 87–97, 111–115, 99–109
  laboratory measurement of density change, 100–101

Carbon
  discussion in relation to growth, 8–10
  allocation between growth, respiration & cell ballast, 114
CAS, 20–24
Chlorella, 11, 12, 13, 79
Complex Adaptive Systems, *see CAS*
Cryptomonas, 9, 13
Cryptosporidium, 62
Cyanobacterial problems, 1–4
  historical accounts, 87
  Brazilian dialysis tragedy, vii
  animal poisonings, 1
  see also Management

Darss–Zingst system, 76, 77, 82
  "Ecospace", 20

English Lake District, 34
Environment Agency, vii, 2, 3, 15, 59, 111
Equation of Radiative Transfer (ERT), 91–93, 95–96
Eudorina, 9
Excel spreadsheet, 65, 115

'f' number, 22
Fick's diffusion laws, 11
Form resistance, 104, 112, *see also Stokes Equation*
Fremyella dictyosiphon, 80, 81

GIS, 63
Gloeotrichia, 66
Gomphospheria, 50, 52, 53
Great Lakes
  Lake Ontario, 21

Hornsea Mere, 60

Java programming language, 115

Lake Kasumigaura, 47, 52, 53, 54, 56
Lake Nieuwe Meer, The Netherlands, 100, 107
Landscape ecology, 21
Light
  Beer–Lambert law, 101, 102, 113
  calculating surface radiation flux, 68, 93, 102, 113
  photon flux density, 12, 13, 113
  underwater light climate, 77
  Venetian blinds, 101
  Zm/Zeu ratio, 101, 102
Limnetic enclosures, 6
  Blelham enclosures, 9, 10
Limnocorrals, 6

Management, 1–4

"Action Plans", 2
"bottom-up control", 20
"top-down control", 3, 20
barley straw, 2
biomanipulation, 3
bottom-up, 23
Control options for eutrophication and algal blooms, 54
nutrient removal, 2
Mecklenburg-Vorpommern, Germany, 76
Mesocosms, 6
Michaelis Menten Kinetics, 9, 10, 14, 89, 100, 106, 111, 112
"microbial loops", 10
Microcystis, 10, 47, 49, 50, 51, 52, 53, 54, 55, 56, 66
problem blooms of, 1
modelling buoyancy change, 99–109, 111–117
density measurements, 102, 104, 105
Mixed layer, 6, 32, 33, 77–78, 113
Modelling, *see also Models*
"Structuralist" Views, 20
artificial neural networks, 39–46, 47–57
'black box', 40
classification of models, 30
'concept', 'theory', 'predictor' definitions, 29
daily integral of photosynthesis, 65–74
deductive & inductive approaches, 47
dynamic mass balance, 39
generalised sensitivity analysis, 39
growth rates of resource replete natural populations, 13
Kalman filter technique, 36, 39
light dependance of growth, 11–13
prediction–explanation continuum, 30
regression, 5, 6, 14, 35, 60–61, 103
role in management, 2
'ruler' extrapolation procedure, 31
time series analysis, 39, 42
vertical migration, *see Buoyancy*
Models
ANNA, 47–57
Droop Model, 9
DYRESM, 112
Expert Systems, 2, 5, 42
modelling algae in the River Thames, 30–35, 39–46
NPZ model, 21, 22, 23, 24
PACGAP, vii, 3
PCLake, 24
PCLoos, 24
Port Phillip Bay model, 24
PROTECH, vii, 2, 6, 13, 14, 15
SCUM, vii-viii, 90, 108, 111–117
Vollenweider's chlorophyll-phosphorus relationship, 30

Neural network modelling, *see Models* 5
Norfolk Broads, England, 3
NRA, vii, 1, 2, 3, 59

Oscillatoria sp., 10, 47, 50, 51, 52, 53, 54, 55, 56, 99, 106, 107, 111, 113

P/I curve, 7, 66, 67, 68, 73, 114, *see also Light*
Photoinhibition (modelling), see 65–74
Planktothrix agardhiii, 13

Rudyard Lake, Staffordshire, 1
Rutland Water, vii, 1, 59, 60, 61, 112, 113

Stokes's Equation, 89, 104, 112
"System canaries", 19, 24

Thames Valley
Buscot, 40, 41, 43–44
Castle Eaton, 40, 41, 43–44
Caversham, 40, 41, 44
Queen Mary Reservoir, 33, 34
King George VI Reservoir, 31
River Thames, 28, 39–46, 51
Staines, 40, 41, 44
Swinford, 40, 41, 43, 44
Thames Valley reservoirs, 28–29
Trichodesmium, 66

Vbscript, 115
Visual Basic, 114, 115

Visual C++, 115
Volvox, 6

Waterscape ecology, 21
Wave focussing, 78
Windermere, 6, 8
Windows 95, 115
World Wide Web
  availability of models, 65
  development & distribution of models, 115

Yorkshire Water, 60, 63

Author index

Arulmani, C., 39
Belov, A.P., 87
Ferguson, A.J.D., 1
Forster, R.M., 75
Giles, J.D., 87
Harris, G.P., 19
Howard, A., vii, 39, 59, 111
Irish, A.E., 5
Kneale, P.E., 59
Mur, L.R., 99
Passarge, J., 99
Recknagel, F., 47
Reynolds, C.S., 5
Schubert, H., 75
Steel, J.A., 27
Visser, P.M., 99
Walsby, A.E., 65
Whitehead, P.G., 39